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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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10/801,012

03/16/2004

Jun Ozawa

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1602

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7590

02/18/2009

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1940 DUKE STREET
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EXAMINER

MOORE, KARLA A

ART UNIT

PAPER NUMBER

1792

NOTIFICATION DATE

DELIVERY MODE

02/18/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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|------------------------------|--------------------------------------|-------------------------------------|--|
| Office Action Summary | Application No. 10/801,012 | Applicant(s) OZAWA ET AL. | |
| | Examiner KARLA MOORE | Art Unit 1792 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) 6-25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 26-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 March 2004 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claim 1, 26-27 and 30-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,755,888 to Torii et al. in view of U.S. Patent No. 6,305,895 to Ozawa et al.

4. Torii et al. disclose a processed object processing apparatus that processes objected to be processed substantially as claimed and comprising: first and second treatment chambers (Figures 3 and 4, 3 and 4) that are communicably and adjacently connected to each other and in which the objects to be processed are processed; a

transfer arm (9) that transfers the objects to be processed into and out of each of said first and second treatment chambers, and having a processed object holding part holding the object to be processed; wherein said second treatment chamber is a vacuum chamber, and said one transfer arm and said first and second treatment chambers are aligned in the same straight line, and wherein the transfer arm is capable of entering into both of said first and second treatment chambers such that the transfer arm can transfer directly the object to be processed to said first and second treatment chambers. A first gate valve (7) is provided between the first and second treatment chambers for passage of a processing object.

5. However, Torii et al. fail to teach processing apparatus comprising a single load lock chamber in which the transfer arm is located.

6. Ozawa et al. teach the use of a load lock chamber (3) in which a transfer arm (7) is located aligned with a processing apparatus (4) in the same straight line for the purpose of delivering an object between a clean room space and the processing apparatus inexpensively and while preventing the object from being influenced by dust, inter alia. A gate valve (26) is further provided between the load lock chamber and the processing apparatus for the purpose of controlling a degree of vacuum of the processing apparatus during processing. See Figures 1-10; column 1, rows 5-49 and column 5, rows 16-19.

7. It would have been obvious to one of ordinary skill in the art at the time Applicant's invention was made to have provided a load lock chamber in Torii et al. which the transfer arm is located aligned with the treatment chambers of the processing

apparatus in the same straight line in order to deliver an object between a clean room space and the treatment chambers of the processing apparatus inexpensively and while preventing the object from being influenced by dust, inter alia, as taught by Ozawa et al. It would have been further obvious to provide a gate valve (e.g. a second gate valve) between the load lock chamber and the processing apparatus as disclosed by Torii et al. and Ozawa et al. in order to control the degree of vacuum of the processing apparatus during processing as taught by Ozawa et al.

8. Regarding the specific method steps recited in the claims, the courts have ruled that claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function. In re Danly, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). The courts have also ruled that a claim containing a “recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus” if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).

9. With respect to claims 26 and 27, the first and second treatment chambers are capable of being used simultaneously. Also, the transfer arm is capable of transferring an object to one of the systems while an object is being processed in the other. Further, while an object is being housed in the one load lock system the transfer arm is capable of transferring another object to be processed out of said first treatment system and into said second treatment system.

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10. With respect to claim 30, Ozawa et al. further disclose the provision of a loader module (Figure 1, 1 and 2) this is communicably and adjacently connected to said one load lock system.

11. With respect to claim 31, the apparatus of Torii et al. further comprises: a first connecting unit (Figure 3 and 4, 7) connecting said first and second treatment chambers and Ozawa et al. discloses the use of a second connecting unit (Figure 7a, 26) connecting said second treatment system and said one load lock system and a third connecting unit (e.g. Figure 2a, 25) connecting said one load lock system and said loader module, wherein said first, second and third connecting units are aligned in the same straight line.

12. With respect to claim 32, said load lock system is constructed such that an interior thereof is capable of being evacuated and opened to the atmospheric air (e.g. when the third connecting unit of Ozawa et al. is opened).

13. With respect to claim 33, a pressure inside said loader module is atmospheric pressure (the load lock is expressly used for transferring the object between atmospheric pressure on a loader side thereof to a vacuum pressure on the treatment chamber side thereof).

14. Claims 2-5, 28-29 and 34-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,755,888 to Torii et al. in view of U.S. Patent No. 6,305,895 to Ozawa et al. and U.S. Patent No. 5,174,881 to Iwasaki et al.

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15. Torii et al. disclose a processed object processing apparatus that processes objected to be processed substantially as claimed and comprising: first and second treatment chambers (Figures 3 and 4, 3 and 4) that are communicably and adjacently connected to each other and in which the objects to be processed are processed; a transfer arm (9) that transfers the objects to be processed into and out of each of said first and second treatment chambers, and having a processed object holding part holding the object to be processed; wherein said second treatment chamber is a vacuum chamber, and said one transfer arm and said first and second treatment chambers are aligned in the same straight line, and wherein the transfer arm is capable of entering into both of said first and second treatment chambers such that the transfer arm can transfer directly the object to be processed to said first and second treatment chambers.

16. However, Torii et al. fail to teach processing apparatus comprising a single load lock chamber in which the transfer arm is located.

17. Ozawa et al. teach the use of a load lock chamber in which a transfer arm is located aligned with a processing apparatus in the same straight line for the purpose of delivering an object between a clean room space and the processing apparatus inexpensively and while preventing the object from being influenced by dust, inter alia (Figures 7a-c; column 1, rows 5-49).

18. It would have been obvious to one of ordinary skill in the art at the time Applicant's invention was made to have provided a load lock chamber in Torii et al. which the transfer arm is located aligned with the treatment chambers of the processing

apparatus in the same straight line in order to deliver an object between a clean room space and the treatment chambers of the processing apparatus inexpensively and while preventing the object from being influenced by dust, inter alia, as taught by Ozawa et al.

19. However, Torii et al. and Ozawa et al. fail to explicitly teach that either of the first or second treatment systems comprises a chemical oxide removal (COR) treatment system.

20. Iwasaki et al. teach providing a COR treatment system as part of an inline system comprising thin film deposition apparatus for the purpose of removing a naturally grown oxide film and other contaminants from the substrate surface and continuously forming thin films on wafers without exposing the wafer to the air at relatively lowered temperatures without giving an damage to the substrate surface (column 4, rows 23-29).

21. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided a (COR) treatment system in Torii et al. and Ozawa et al. in order to form an inline system comprising thin film deposition apparatus comprising means to remove a naturally grown oxide film and other contaminants from a substrate surface and continuously form thin films on wafers without exposing the wafer to the air at relatively lowered temperatures without giving an damage to the substrate surface as taught by Iwasaki et al.

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22. With respect to claim 3, each of the treatment chambers of Torii is capable of heat treatment using a heater (5). Examiner notes with respect to the order of treatment, which is viewed as an intended use, that the courts have ruled that a claim containing a “recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus” if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987)

23. With respect to claim 4, Ozawa et al. teaches that treatment chambers are only accessed by load lock chambers in a vacuum state and are never exposed to atmosphere (Figures 7a-c; column 1, rows 5-49).

24. With respect to claim 5, further, as described above, in Ozawa et al. said load lock chamber is disposed in a position such as to form a line with said at least one vacuum treatment system.

25. With respect to claims 28 and 29, the first and second treatment chambers one of which could be a COR chamber, are capable of being used simultaneously. Also, the transfer arm is capable of transferring an object to one of the chambers while an object is being processed in the other. Further, while an object is being housed in the one load lock chamber the transfer arm is capable of transferring another object to be processed out of said first treatment chamber (e.g. COR treatment chamber) and into said second treatment chamber. See description of the prior art above.

26. With respect to claim 34, Ozawa et al. further disclose the provision of a loader module (Figure 1, 1 and 2) this is communicably and adjacently connected to said one load lock system.

27. With respect to claim 35, the apparatus of Torii et al. further comprises: a first connecting unit (Figure 3 and 4, 7) connecting said first and second treatment chambers and Ozawa et al. discloses the use of a second connecting unit (Figure 7a, 26) connecting said second treatment system and said one load lock system and a third connecting unit (e.g. Figure 2a, 25) connecting said one load lock system and said loader module, wherein said first, second and third connecting units are aligned in the same straight line.

28. With respect to claim 36, said load lock system is constructed such that an interior thereof is capable of being evacuated and opened to the atmospheric air (e.g. when the third connecting unit of Ozawa et al. is opened).

29. With respect to claim 37, a pressure inside said loader module is atmospheric pressure (the load lock is expressly used for transferring the object between atmospheric pressure on a loader side thereof to a vacuum pressure on the treatment chamber side thereof).

Response to Arguments

30. Applicant's arguments with respect to claims 1-5 and 26-37 have been considered but are moot in view of the new ground(s) of rejection. Ozawa et al. and Torii et al. have been further relied in showing the obviousness of Applicant's

amendments to the claims. As noted above, the amended claims contain considerable language drawn to an intended use of the claimed apparatus. As also noted above, in the examination of apparatus claims, such limitations are not substantially material to examination of the claimed invention.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KARLA MOORE whose telephone number is (571)272-1440. The examiner can normally be reached on Monday-Friday, 9:00 am-6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571.272.1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/Karla Moore/
Primary Examiner, Art Unit 1792